Applications of Milwaukee County's *Interactive Mapping Service*

http://maps.milwaukeecounty.org/

Exercise 1:

An Introduction to Layers and Tools

The Main Map Window is the focal point of the *Interactive Mapping Service*, and is surrounded by panels containing tools and functions that allow you to move around the map, change the appearance of the map, and gather information about map features. Features are mapped points, areas, and lines that have data associated with them, such as tax parcels.

A) Click on the "Zoom In" tool at the top right corner of the Main Map Window and zoom into a location in Milwaukee. In the lower right corner of the Map Window, there is a scale box along with a "Jump to Extent" menu that allows you to zoom to the extent of several pre-defined areas (cities and villages by default), or "bookmarks." You may also add your own bookmarks to the default list. Type "1200" in the scale box and click the black "go to" arrow to the right. Notice how the appearance of the map changes as the scale changes. By default, certain layers (or groups of features) are set to be "not visible" when the map is open, while some layers are set to turn on or off automatically, or change in appearance, as the map's scale changes.

B) The Layer List to the left of the Main Map Window presents all the available layers that can be turned on or off to compose your map. Layers are organized into group folders. Click on the "Map Layers" group layer to expose the list of general reference layers used in the map. At this scale, street centerlines and parcel boundaries are the prominent map features. Note that the "Tax Parcels" layer is highlighted in blue. This means that the "Tax Parcel" layer is active for selection, which will be covered in the next exercise. Click the checkbox to the right of the "Centerlines" and "Highways" layer names to turn the layers off.

C) The "Tax Parcel" layer is labeled with its associated house number. Click on the layer's name to expose the available layer actions and choose "Hide Labels."

Exercise 1, continued

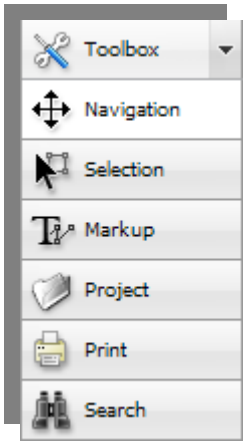
D) Click on the Topography group layer to expose the list of available layers that are maintained for planimetric mapping (the mapping of physical features, both natural and cultural, such as rivers, streets, and buildings), along with layers maintained to map changes in elevation (topography). Click on the "Contour Lines" and the "Planimetric Lines" layers to display topographic contours and structure footprints in the map. Click "Show Legend" at the bottom of the Layer List to display the symbology (the appearance of features in the map using line color, line type, etc.) associated with each layer.

E) The Cadastral group layer displays layers maintained for the mapping of real property across Milwaukee County. Click on the Cadastral group layer to expose the layers that are available in that group. Under the Cadastral group layer name, click the checkbox to the right of the "Parcel Anno" layer to make that layer visible in the map. Next, click the checkbox to the right of the Cadastral group layer. Notice that the checkbox has changed from grey to green, and that all layers within the Cadastral group layer are now checked and visible in the map. Turn all the layers in the group off by clicking again on the group layers checkbox.

F) A utilities group layer that includes gas, electric, communications, water, and sewer features is also available to those with login credentials. At the current scale of 1:1200, turn on a combination of the We Energies layers to display gas and electric features in the map.

G) Press F5 or click on your browser's "Reload" button to refresh the map. This will restore all the map's defaults, such as visible layers and the extent (scale and visible area) of the map.

G) The bar at the top of the Map Window houses all available tools, which are group together in toolbars. By default, the "Navigation" toolbar is exposed. This contains basic tools for moving around the map. Click on "Toolbox" to expose the list of available toolbars (right), and take a look at the tools in each toolbar. We will be covering most of the tools today.



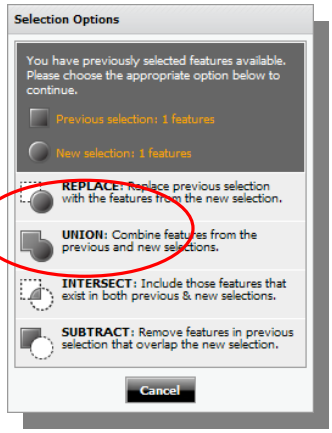
Exercise 2:

Select a Group of Non-Contiguous Parcels, Generate a Parcel Report, and Print a Map

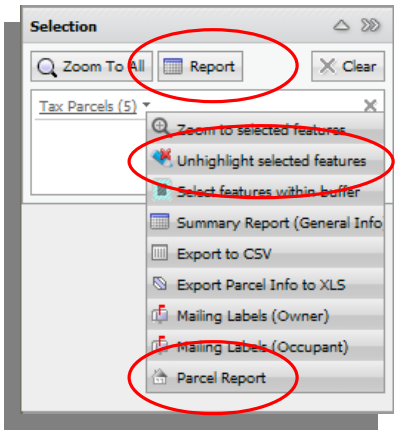
A) From the Search Toolbar, click on the "Taxkey" search button. In the Taxkey search panel that appears next, type the following taxkey: 4210281000. The corresponding parcel will be the first parcel added to a new selection set (a group of selected parcels), and the Selection results panel will appear below the Layer List to provide additional tools for working with the selection set. The map will automatically zoom to the first selected parcel.

B) In the scale box located in the lower left corner of the Main Map Window, type "2800" which will zoom out to make the entire block visible.

C) Open the Selection Toolbar, choose the "Point" selection tool, and click on parcels on Oak Park Court that have the following house numbers: 567, 669, 515, and 698. Each time you click on a parcel, you will be given options (right) for modifying the selection set you are creating. Choose "union" to add each additional parcel to the selection set. The map will automatically zoom to the extent of the selection set as each parcel is added.



D) Data associated with selected parcels, such as assessed value, legal description, and owner information, may be viewed and exported a few different ways. In the Selection results panel (left), click "Report" to view a table of information about the 5 selected parcels. A list of actions becomes available in the Selection results panel (right) when the name of the selection set, "Tax Parcels (5)", is clicked. A useful action for a small selection set such as this is the "Parcel Report," a PDF document that includes basic parcel information, along with a map image, for each of the selected parcels. To prevent the blue selected parcel highlighting from appearing in the Parcel Report, click "Unhighlight selected features" prior to generating the Parcel Report. Save the PDF to a local directory, or share it via email.



Exercise 3:

Add Markups and Print Your Map

A) Markups are custom annotations and shapes that you draw on your map to add additional information that is specific to your map's purpose. Open the Markup Toolbar and click the "Text" button. Define your text's appearance using the options that are presented below the layer list, or accept the default settings. When finished, click on a location on the map where you wish to begin your text, and type the following text into the box that appears next: "Comparable Properties Near 596 S Oak Park Ct," and click "Submit."

B) Next, we will draw a circle around 596 S Oak Park Ct. using the "Circle" Markup tool. As with the Text tool, a panel displaying markup appearance options will appear after the tool is chosen. Change the Boundary Color to "Maroon," the fill color to "Transparent," and the Transparency to "95." Click on the map where you want the circle's center point to be placed, and drag to establish the circle's radius. Release your mouse button when finished. If you make a mistake and wish to start over, click the "Erase" tool on the Markup Tool and drag a box around the piece of markup that you wish to remove. Be careful, as any markup shapes that intersect with the box you drag will be erased. To erase text, drag a box that intersects with the beginning of the text string. Use the "Clear" tool to erase all markups at once.

C) A simple, preformatted map that includes the extent of the 5 selected parcels along with any markups and custom layer combinations can be generated quickly and easily. Any combinations of layers from the Layer List can be displayed in the map. For example, click on the "Aerial Photos" group layer in the Layer List to expose the list of available aerial photo layers. From this list, check the 2010 layer to add this layer to your map.

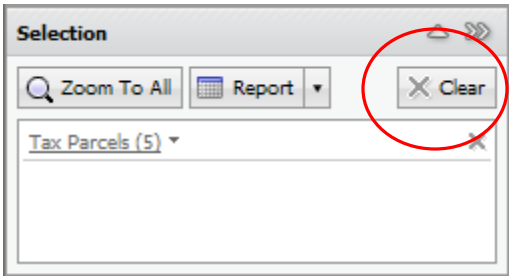
D) Open the Print Toolbar and click on the "Print" button. In the "Print Template" panel that appears next, select "8.5x11 Landscape." accept the default settings but take a moment to familiarize yourself with the options available, and insert a title and notes if desired. Click "View" when finished. Save the PDF to a local directory, or share it via email.

Exercise 4:

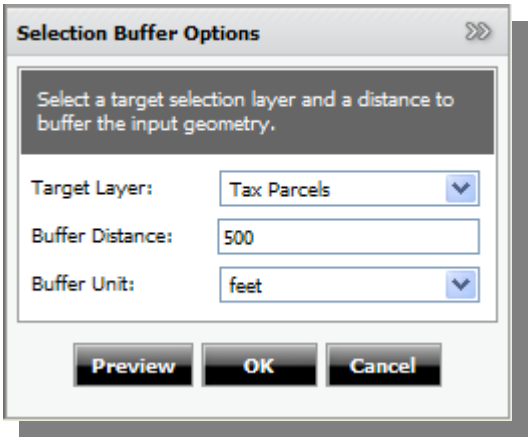
Select and Deselect Parcels Within a Defined Radius, View Oblique Images of Selected Parcels, and Save Your Project

It might be useful to know more about properties that are within a certain distance from a parcel of interest. We will create a selection set from parcels within 500 feet of a property, remove parcels from the selection set that do not meet our criteria, and view oblique images of selected parcels. Since there will be a large number of parcels in this selection set, we will also save our work as a project which will allow us to return to it at a later time.

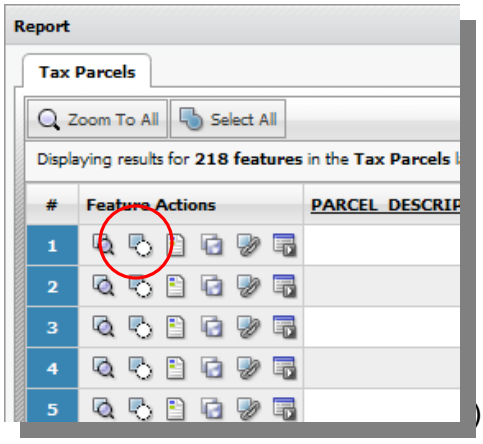
A) If parcels remain in your selection set from previous exercises, remove them by clicking "Clear" in the Selection results panel (left). Next, locate the property at 1651 S 20th St. using the "Address" search tool in the Search Toolbar.



B) From the Selection Toolbar, choose the "Buffer" tool, and click on the parcel at 1651 S 20th St. In the "Selection Buffer Options" panel that appears next (right), create a buffer with a 500-foot radius and click "OK." When prompted, choose to add the newly selected parcels to the selection set via "Union" as you did in Exercise 2. The map will automatically zoom to the newly selected parcels.



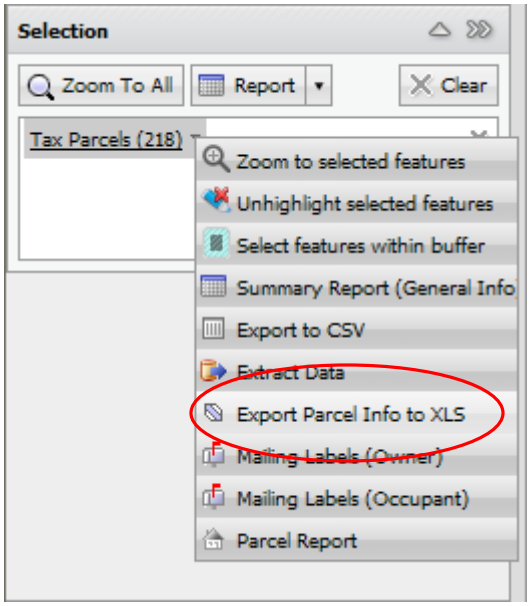
A) Next, we will remove non-residential parcels from the buffer selection set. Click on "Report" in the Selection results panel to view a table of the selected parcels' attributes. Expand the width of the Report window by clicking on the edge and dragging, scroll to the far right of the table, and click on the "DESCRIPTION" field (column) name (not PARCEL_DESCRIPTION at the far left of the table) to sort the values in that field. In the Report panel (left), scroll back to the left and remove (deselect) from your selection set any parcels that are not residential by clicking on the "remove from selection" button in the



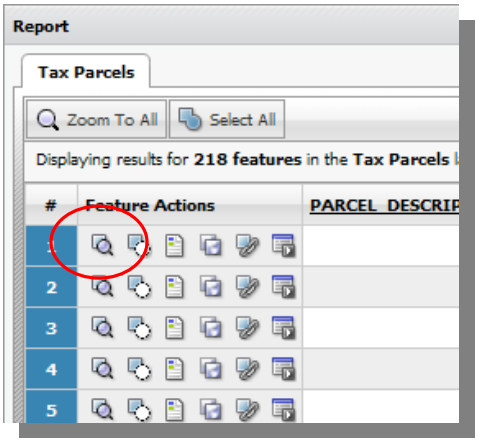
Exercise 4, continued

"Feature Actions" column. Note that the record remains in the table and that the "remove from selection" button changes to a "add to selection" button, allowing you to reselect a parcel if necessary. Close the Report panel, and open a fresh report that contains only the selected records. Using the method employed for removing non-residential parcels from the selection set, you could also exclude parcels with a size or value that is outside of a target range.

C) Since this selection set is rather large, it would be more convenient to view and work with the data within a familiar application such as Excel. Export this information into Excel by choosing "Export Parcel Info to XLS" from the list of actions that become available when the selection set in the Selection results panel (right) is clicked. Once downloaded, save it to the directory of your choice and treat it as you would any other Excel spreadsheet.



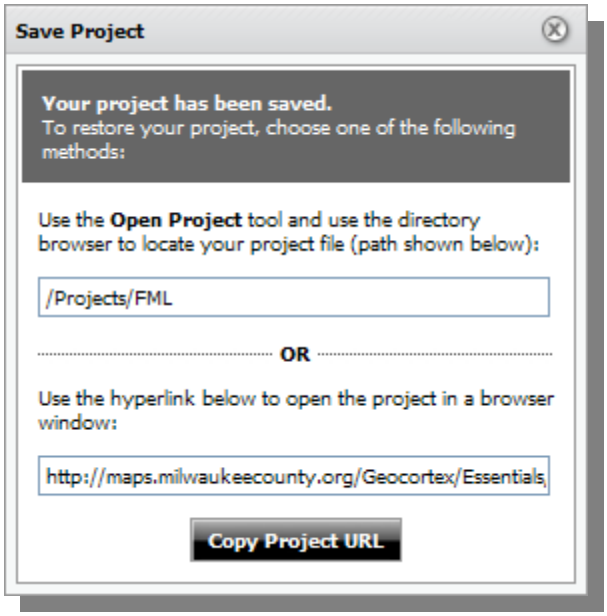
D) To display a selected parcel in a Pictometry oblique view, in the Report panel (below), click on the "Zoom to Feature" button in the "Feature Actions" column in the row that corresponds to one of the selected parcels. Open the Pictometry Image Navigator by clicking on the grey up arrow at the bottom center of the Main Map Window. Next, click the green down arrow in the top right corner of the oblique viewer. This will display the center of the Main Map Window's view (the selected parcel that you zoomed to) in the oblique viewer. Crosshairs in both views indicate the location of the selected parcel. To view the west south, and east orientations, click on the "rotate clockwise" tool in the oblique viewer.



Exercise 4, continued

E) Several measurement tools are available in the oblique viewer. To measure the footprint of a structure, choose an oblique orientation that allows the best view of a structure, zoom in or out using your mouse's scroll wheel as necessary, and click on the oblique viewer's Area measurement tool  . Click on the first corner of the structure, hold down your left mouse button and drag, and press your "v" key to add a vertex at each corner of the structure. Release your mouse button when finished. The final point will automatically snap to the first point, closing the polygon. The area will be displayed in the lower right corner of the oblique viewer.

F) Viewing an oblique image of each of the selected parcels is time consuming. It may be necessary to move on to other tasks throughout the day or week and come back to this task later, picking up where you left off. The *Interactive Mapping Service* allows you to save your customized map, along with your selection set, combinations of visible layers, markups, etc.



Open the Project Toolbar and click the "Save" button. Choose "Save to Server," then name your project with your three initials when prompted (if a project with that name already exists, insert a number after your three initials). The panel to the left will appear, providing you an opportunity to save the unique URL that is generated for your project. This URL (or hyperlink) is the link to your specific project, notice that it ends with the name you gave your project (…Project=FML). Use this link as you would any other internet hyperlink: save it as a shortcut on your desktop, or copy and paste it into a Word document or into an email message to share your project with others. For this exercise, copy the URL, and create a new shortcut on your desktop. Right-click anywhere on your desktop, choose "New -> Shortcut," paste the URL under "Type the location of the item" in the "Create Shortcut" panel, click "Next," then click "Finish." Give the new shortcut a name if desired.

Exercise 4, continued

G) Double-click on the desktop shortcut you created in the last step, and enter your login information when prompted. Once you have opened your project, notice that the selection set you created prior to saving your project remains, allowing you to pick up where you left off.

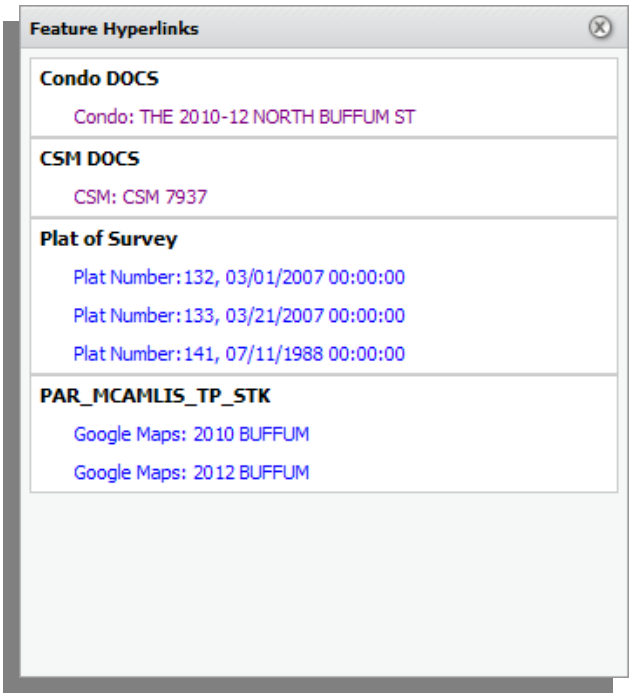
Exercise 5:

Accessing Cadastral Documents

The *Interactive Mapping Service* provides for the retrieval of available condominium and subdivision documents, plats of survey, and certified survey maps (CSMs).

A) Open the Search Toolbar, and with the "Owner" search tool, locate the property owned by Daniel Smullen. Next, click on the "DOCUMENT LINKS" layer group in the Layer List to expose the list of available layers in that group, and click the checkbox to the right of the group layer name to make each layer visible in the map. At the bottom on the layer list, click on "Show Legend" to expose the symbology that defines the appearance of each layer's features in the map. When a document is available, features will be outlined in the map using this symbology. At the extent visible in the map, the symbology indicates that there are parcels with associated condo, subdivision, CSM, and plat of survey documents available.

B) Open the Selection Toolbar and click on the "Link" tool. Click on the parcel at 2010-2012 North Buffum Street. A panel (right) will appear to display a summary of available links that are associated with the parcel. In this case, a condominium document and a CSM (both in PDF format) may be viewed for this property. Links to the location in Google Maps are also presented.



Exercise 5, continued

C) Click on the "Condo DOCS" link. A new browser tab will display a dialogue for downloading the condominium PDF document, allowing you to open or save the PDF. Use the same method to download the certified survey map associated with this property.

D) Click on one of the plat of survey links. This link will directly display the PDF document in your browser. Use the tools in your browser's file menu or at the top of the PDF viewer to save or email the plat of survey PDF. Use these condominium, CSM, and plat of survey PDFs as you would any other PDF.

E) Next, we will access the document associated with the subdivision located to the north of E. Brown St. between Hubbard and Buffum. First, open the "CADASTRAL" group layer and click on the checkbox to the right of the "Subdivision Anno" layer. This will display information about the subdivision in the map, such as its name and lot numbers. To view the subdivision document associated with "The Homes at Brewers Hill Commons," hold down you CTRL key to override your popup blocker, and click on the alley that parallels E. Brown St. to the north with the "Link" tool. This PDF is downloaded via the same method used to access the condominium and CSM documents.

F) If you know its name or number, you may also search directly for a condominium, subdivision, or CSM using the "Cadastral" and "CSM" search tools in the Search Toolbar. Once the feature is located, use the steps outlined above to access a document if a document is available.

Exercise 6:

Export Map & Oblique Images, and Insert Exported Images into a Word Document

Quick "snapshots" of the views displayed in the Main Map Window and in the oblique viewer can be easily and quickly exported and shared with others.

A) Open a new Microsoft Word document, and insert a table with 1 column and 4 rows and center the table.

B) Move back to the *Interactive Mapping Service*, and open the Navigation Toolbar. Use the available tools to pan and zoom in to the parcel at 2010-2012 N Buffum Street. Open the "AERIAL PHOTOS" group layer, and turn on the 2010 aerial layer. Next, open the Project Toolbar and click the "Export" tool. Accept the defaults that follow, hold down your Ctrl key to override your popup blocker, and click "Open." When the exported image appears in a new browser window, right click and select "Copy."

C) Return to Word, Type a caption or title in the first row, place your cursor in the second row, right click, and choose "Paste." Use the Picture tools in Word to resize the image to 50%.

D) Open the oblique viewer and center the Map Window's view in the oblique viewer as you did in the previous exercise. Use your mouse's scroll wheel to zoom the oblique view in or out as necessary. Click on the image export tool  in the oblique viewer, drag a box to define the area to export, accept the defaults, and click "Export." The exported image will open in your computer's default image viewer. Save the image locally.

E) Return to Word. Type a caption or title in the third row and place your cursor in the last row of the table. From the Insert menu in Word, choose *Picture*, then *From File*, and browse to the exported oblique image's location. Resize the image so that the table appears on only one page, and save your Word document if you wish. The page that follows provides an example of how your finished document might look.

Condominium Properties at 2010-2012 N Buffum St. (ortho view)

Condominium Properties at 2010-2012 N Buffum St. (view looking north)